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GOVERNMENT ACTION IN DEVELOPING THE MINERAL INDUSTRY IN AUSTRALIA

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GOVERNMENT ACTION IN DEVELOPING THE MINERAL INDUSTRY IN AUSTRALIA

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1. The development of Australian mineral resources has and continues to be largely in the hands of private enterprise. Nevertheless there are cases where the government, either Commonwealth or State, for strategic reasons or to meet special economic circumstances has entered into actual production. These excursions by government into specific fields of mineral production have been of major importance to a particular industry, but in the context of the whole Australian industry the direct contribution has been and remains relatively small.

2. It is the influence of government policies, both Commonwealth and State, on the activities of the private sector of the mineral industry that is of major importance. Industrial development and production programmes have been influenced to varying degrees by such policies in the past and it is certain that with the growing industrial awareness of the underdeveloped mineral potential, the future rate of development and its direction will more than ever reflect the attitude of governments.

REVIEW OF THE MINERAL INDUSTRY

3. The discovery of gold in 1851 was the first mineral discovery of any significance in the development of Australia. At that time the recorded population was only 500,000 but in a period of ten years this had doubled, largely as a result of the gold discoveries. Mineral discoveries of major importance followed rapidly and included tin at Mt. Bischoff in 1871, silver-lead-zinc at Broken Hill in 1883, copper at Mt. Lyell in 1890, gold at Coolgardie and Kalgoorlie in 1892 and 1893. Important discoveries of iron ore were also made late in the 19th century; coal had been known from the earliest days of settlement and by the end of the 19th century the existence of many of the major coal deposits was known.

4. Following this period of intensive prospecting and development the most significant discovery to the end of World War II was the lead-zinc deposit (and subsequently copper) at Mt. Isa. These and other discoveries and their development had far reaching effects on the economy as a whole. They helped to advance pastoral and agricultural development in many areas, and provided raw material and financial resources for the establishment of a wide range of secondary industries (iron and steel, chemical, engineering etc.) so vital to expansion.

5. In the post-World-War II era there has been an upsurge of exploration and development which has led to some remarkable successes -

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notably the discovery of major uranium deposits now producing, extensive bauxite deposits now being developed, and significant new iron ore deposits now in the course of evaluation.

6. The post-war increased production has been partly absorbed internally but there has also been an increase in the volume of exports. The present output of the industry is worth £A250 million annually. Exports in 1961 were a record £A93.2 million or about 9% of all exports, the lead-zinc industry being the major contributor. Imports of mineral products in 1961 were valued at £A99.3 million of which crude petroleum accounted for £A78.5 million or 79%. Recent developments within the industry suggest a continuous expansion in exports and also some reduction in the value of imports. Increase in aluminium production will eliminate the need for imports with some excess for export in the near future; the possibility of commercial production of oil following the recent discovery in Queensland is an encouraging development.

GOVERNMENT POLICIES

7. In recent years there has been a trend to formulate government policies to encourage development with a maximum advantage to the country, at the same time permitting this development to be undertaken by private enterprise.

8. The Commonwealth of Australia comprises six States and two Territories and with a few exceptions each State holds sovereign rights to all minerals within its boundaries and administers its own mining legislation. This legislation thus varies from State to State. Notwithstanding the States' sovereign rights over their own mineral resources the Commonwealth Government is able to exert a direct influence on the production and development of the mineral industry. through its control of international trade, customs and excise, income tax, and public borrowings.

9. Another important aspect of Government participation to be considered is the direct technical assistance sponsored by both State and Commonwealth Governments.

TECHNICAL SERVICES AND RESEARCH PROVIDED BY GOVERNMENT AGENCIES

10. State Mines Departments: Each State Government has a Mines Department which includes a Geological Survey. These Departments individually administer the mining legislation and have complete control of mining tenements within the State.

11. The Geological Surveys carry out regional geological mapping (in some cases in conjunction with the Bureau of Mineral Resources) and in general devote much of their effort to detailed mapping of localities of mining interest. Geophysical surveys are also undertaken by some States.

12. Technical officers of the Mines Departments provide advice to the mining and allied industries where required, carry out field examinations of mining prospects, advise on exploration and development, select sites for water supply, and in general give a free technical service to the mining industry. Assays and determinations of rocks and minerals are carried out for prospectors by the Departments, usually without charge.

13. Financial and practical assistance is given in a number of ways which vary from State to State. Loans, grants and subsidies are provided under certain circumstances and boring-plant, mining equipment and treatment works are available for hire at a reasonable charge. Assistance is provided for transport, such as road making, railways and port facilities. Some States give financial assistance to prospectors in the form of direct payments.

14. Commonwealth Bureau of Mineral Resources, Geology and Geophysics. The Bureau of Mineral Resources is a Commonwealth body, formally constituted in 1946. Its functions are:-
(a) to explore for, investigate and encourage the development of mineral deposits;
(b) to survey and assess the mineral resources of the Commonwealth and its Territories and to initiate and investigate proposals for their development;
(c) to interpret the results of completed surveys and recommend ways of remedying or meeting mineral deficiencies that may become apparent, and to advise on all aspects of the mineral economy of Australia, including the best utilization of mineral resources in the national interest; and
(d) to carry out geological and geophysical surveys and investigations, and advise on all aspects of applied geology and geophysics.

15. The Bureau employs a staff of approximately 460, of which almost 400 are technically trained, some 220 being professional officers.

16. The funds available to the Bureau have increased steadily. For the financial year 1950/51 the expenditure was £A438,000 which increased to £A843,000 for 1957/58. The search for oil caused an accelerated increase in 1961/62 when expenditure was £A1,782,000. Estimated expenditure for the current financial year, 1962/63, is £A2,283,000. These amounts do not include subsidies paid to the petroleum exploration companies, though the Bureau administers the Subsidy Acts.

17. The activities of the Bureau are subject to change to meet the needs at any particular time. Much of the present effort is devoted to assisting in the search for oil.

18. The Bureau, in conjunction with the State Mines Department, is committed to carry out geological and geophysical regional mapping of the whole of Australia. The national grid on which most mapping is based is divided to give areas about 540 bounded by lines 1°30' longitude and 1° latitude apart. The scale is usually 1:250,000.

19. Up to now about 100 sheets (18.5% of the total area) have been geologically mapped at this scale. About 30 areas are mapped per year, 25 by the Bureau and the remainder by the State Surveys. Regional gravity coverage, at a station spacing of one station per 50 square miles has been undertaken by the Bureau, using helicopters for transport. About 12.5% of the continent has already been covered and at the present rate and spacing the survey will be completed by 1979. A similar regional aeromagnetic and scintillometric survey is under way and about 12% of the total has been completed. At present special effort is being given to mapping of the sedimentary basins to assist in the search for oil.

20. Commonwealth Scientific and Industrial Research Organization (C.S.I.R.O.): Geological mapping is not a specific undertaking of C.S.I.R.O. unless it is required to further research into another

field. For example, C.S.I.R.O. recently mapped the soil distribution of a large area in the centre of Australia as part of an investigation into pastoral development.

21. C.S.I.R.O. undertakes ore-dressing and mineragraphic investigations as required by the industry. For this purpose it maintains three laboratories, two within Departments of the University of Melbourne, and one at the School of Mines in the gold-mining centre of Kalgoorlie in Western Australia. These laboratories perform complementary services - the Mineragrpahic Investigations Laboratory conducts microscopic examinations of the mineral associations and degree of dispersion in ores, whilst the Ore-Dressing Laboratories investigates methods of beneficiation. Much of this research is carried out on a co-operative research basis with the mineral industry.

22. Australian Mineral Development Laboratories (A.M.D.L.): These Laboratories are a joint undertaking by the Commonwealth Government, the Government of South Australia, and the Australian Mineral Industries Research Association. They were established on a national basis to offer a contract service for the investigation of problems relating to the development of mineral resources, mineral processing and utilization of mineral products. The Australian Mineral Industries Research Association is an association of companies engaged in the mineral industry, formed to foster and develop mineral research.

23. The wide variety of research facilities offered by the A.M.D.L. and complete integration of these services is of importance to many industries and to other groups which cannot afford a similar range of facilities or the specialized equipment necessary for the solution of their problems.

24. Leases and Royalties: The development of a mineral deposit in any State is subject to the mining laws of that particular State; in the Territories, to the ordinances of the Commonwealth. Any new development immediately benefits the State or Territory in which it takes place; this stems from increased employment opportunities, both direct and indirect. Furthermore royalties on production, where they are levied (the basis of royalty arrangements varies from State to State and also within individual States according to the nature of the commodity etc.), are an additional source of revenue. Greater returns may also accrue from State transport systems as well as other benefits arising from the new sphere of production.

GOVERNMENT AID AND INCENTIVES

25. Public Works: Accelerated capital works programmes financed partly by the Commonwealth and State Governments have in recent years, been recognized as of major assistance to development. Important projects now in hand include the rehabilitation of the Mt. Isa-Townsville railway (copper, lead, zinc); port facilities in New South Wales and Queensland (coal exports); and standardization of the Kalgoorlie-Kwinana railway (iron ore). A substantial proportion of this investment will be recovered later from mineral freights but the immediate availability of these government funds has accelerated development which, if dependent on private finance, undoubtedly would have been delayed. Other industries too will naturally benefit from such projects.

26. Taxation: The Commonwealth Government is the sole authority imposing income tax in Australia. The provisions of the Income Tax

and Social Services Contribution Act which aid the mining industry have been developed over the years in recognition of the special nature of the industry and the desirability of offering incentives for expansion.

27. As a guide to the present position, the following outline may prove useful.

(a) Exempt Income. Certain income derived by prospectors and proprietors of mining enterprises is specifically exempt from tax -

(i) income derived from the disposal of the rights to mine for gold or for a metal or mineral prescribed by regulation,

(ii) income derived from a property mined principally for gold,

(iii) income from the mining and treatment of uranium ore,

(iv) 20 per cent of net income derived from the production of prescribed metals or minerals; the list is the same as that which applies to (i) above - the most important minerals excluded are lead, zinc, silver, iron ore and coal.

(b) Deductions for Capital Expenditure. Capital expenditure is not an allowable deduction under the general provisions of the income tax law, but the position of the mining industry is distinguishable from that of other industries since its raw material reserves cannot be replaced. This is recognized in the income tax law, which permits special deductions for capital expended in a mining venture conducted for the purpose of earning assessable income. Briefly the allowances are available on the following basis.

(i) Exploration or Prospecting Expenditure. Deductions from the income of a year in which the exploration or prospecting expenditure is incurred are allowable up to the amount of net income derived from a mining business or associated activities during that year.

(ii) Expenditure on Necessary Plant and Development of the Mining Property. This expenditure is deductible over the estimated life of the mine or 25 years, whichever is the less. Alternatively, deductions are, at the option of the taxpayer, allowed for the year in which the capital is expended. A further alternative applies where a mine-owner appropriates assessable income of one income year for expenditure during the ensuing year on necessary plant or on development of the mining property. In these circumstances a deduction is available for the year in which the appropriated income was derived.

(iii) Expenditure on Housing and Welfare. Expenditure in this category is deductible over the estimated life of the mine or, if the taxpayer so elects, over a period of five years.

(c) Expenditure on Prospecting or Mining for Petroleum. The general effect of deductions allowable under this category is to free from income tax proceeds from petroleum income in Australia, the Australian Territory of Papua or the Trust Territory of New Guinea until such time as the capital expended in prospecting and mining for petroleum or in plant for its treatment has been firstly recouped. However there are circumstances where a company would have to forego these allowances, i.e. where the company elects on behalf of shareholders that they may deduct the full amount of share capital subscribed by them in determining their assessable income.

(d) Deductions Allowed to Shareholders. The owners of shares in a company or syndicate whose principal business is mining or prospecting is entitled to a deduction of calls paid by him on those shares in arriving at his assessable income. In all cases the amount of the allowable deduction is not less than one-third of the calls paid, but as an incentive to investment 100% may be deductible if the company so elects. If such an election is made then the company foregoes other deductions of a capital nature from its income when it comes into production.

(e) Exemption of Dividends. Dividends in the hands of share-holders are exempt from tax when paid wholly and exclusively out of net exempt income from mining operations or the sale of rights to mine, if the exception of the income is granted under the respective provisions of the Act.

28. Subsidies and Bounties: Payments of subsidies and bounties to various sections of the industry have been made from time to time, but such assistance as a stimulus to development would normally be the exception rather than the rule. At present, direct financial assistance is available under certain circumstances to producers of copper, gold, pyrites and sulphuric acid. These can hardly be looked upon as an incentive to new development as basically they are designed to maintain production which otherwise would have to cease, an important consideration being the livelihood of relatively important centres of population.

29. Although the usual approach is to use subsidy and bounty payments to enable existing production to be maintained, the concept of the present subsidy scheme for oil exploration is the eventual development of a new industry. There is no commercial production of petroleum in Australia and the expenditure on imports exceeds that of any other single commodity; the availability of domestic petroleum in times of emergency is also an important consideration.

30. To accelerate petroleum exploration the Commonwealth Government embarked on a subsidy scheme in 1957 to encourage private enterprise. Over the years the form of the Petroleum Search Subsidy Act has changed somewhat but in all cases it has been designed to increase exploration, and to ensure that subsidized exploration is adequately planned, carried out and reported upon and that the results of this work are available a relatively short time after completion.

31. Operations which may be approved for subsidy are: (a) detailed structure drilling and test drilling; (b) drilling, including off-structure drilling, for stratigraphic information; (c) geophysical logging of bore holes (including water bores): and (d) geophysical surveys.

32. The aims of the Government are being substantially achieved. Oil search has increased greatly; at the end of July, 1963, thirty-five seismic crews, ten rotary rigs and two cable rigs were in operation. Though these numbers may be small compared with those in oil-producing countries, they are a very substantial increase on the numbers operating only a few years ago.

33. The total expenditure on oil exploration from all sources to the same date was more than £A80 million and almost half of this was in the Australian Territory of Papua and the Trust Territory of New Guinea. To the end of June, 1962, the Commonwealth Government had paid out about £A5 million in subsidy; an additional £A5 million has been allocated for subsidy for the financial year, 1962/63.

34. International Trade: Because of its control of international trade, the Commonwealth Government is in a position to influence the development of domestic industries that may be dependent wholly or in part on oversea markets or are subject to competition from imports. The principal reasons which may result in export controls being imposed are that: (a) domestic resources are regarded as small in relation to requirements of industry; (b) domestic production is inadequate to

meet internal demand; (c) the further treatment of ores and concentrates internally is considered to be in the best interests of the industry and the economy generally; and (d) there are strategic implications.

35. However, where the emphasis is on development it must not be overlooked that the ultimate stimulus to exploration and expansion is the ability to sell either domestically or on overseas markets. Accordingly, where the day to day needs of the domestic industry are likely to be met from known resources for some time ahead, but these resources are relatively limited, it is almost certain that the exploration for new resources will be retarded if access to export markets is not available. The recent history of iron ore exploration in Australia is a very striking example.

36. In 1938 a complete embargo on the export of iron ore from Australia was imposed and this was retained until 1960. The known resources of high-grade iron ore at that time were relatively small for a rapidly expanding industry and very little new discovery was made during these years. As an incentive to exploration and also to take advantage of the possible development of export earnings from iron ore, the embargo was partially relaxed late in 1960. As a result of this change in policy there was a marked upsurge in interest by private enterprise in exploration for iron ore. Recent discoveries suggest that Australia's resources may well be of world-ranking importance and there seems little doubt that eventually they will form the basis of a worthwhile export industry, at the same time providing adequate supplies for the long-term expansion of the domestic iron and steel industry.

37. In order to maximize export earnings and employment opportunities and increase the availability of important by-products, it is natural for countries exporting basic raw materials to attempt to ensure that processing of these raw materials is carried as far forward as possible before shipment. However there is the obvious possibility of a conflict of interest between exporters and importers, particularly where considerable capacity for processing is already available in importing countries.

38. Notwithstanding the objectives of exporting countries there is no doubt that a very rigid policy of maximum processing before export can, in certain circumstances, present problems. Where a country has in its possession a major proportion of world production, and substitute materials are not readily available, the exporter is in a strong position. But where these circumstances do not exist, or where producer-exporters do not act in concert, the ability to export substantially processed materials could well be hindered and the choice may then rest between exporting ores and concentrates or a very reduced quantity of processed material.

39. Protection of a domestic industry from imports may, if considered necessary, be applied in the form of a tariff. Furthermore, quantitative controls on imports may be applied from time to time but this mechanism is generally invoked as a short-term measure to conserve foreign exchange rather than as a means of conferring protection.

40. Rewards: From time to time financial rewards have been offered for the discovery of certain minerals. The most notable and effective recent reward was that offered for the discovery of uranium ore. This reward, together with a prospector's guide issued by the Commonwealth Government, were instrumental in the timely discovery in 1949 of the valuable uranium ore deposit at Rum Jungle, for which the discoverer

received the maximum reward of £A25,000. Two rewards to the maximum amount and numerous proportional ones were paid for other discoveries. There is no doubt that the reward created a great deal of prospecting by individuals. After the uranium industry was established the reward was withdrawn.

CONCLUSION

41. In the post-war era the Australian mineral industry has gone through a period of continuous expansion. Generally speaking this expansion has been from ore-bodies whose existence had been known for some considerable time and were in various stages of development and production. In recent years there have been a series of new important discoveries some of which are now at the point of coming into production; for others plans are in hand for early development.

42. There has been an important increase in the amount of scientific exploration by Government organizations and industry; and recently, a notable inflow of capital and technical knowledge from oversea mining groups seeking to establish productive operations in Australia. This applies to the base metals and industrial minerals, as well as to petroleum in which this development has been the most important.

43. It is impossible to measure in quantitative terms the actual contribution of Government to these developments. Nevertheless it is fair to say that the mineral expansion programme and the impetus to exploration reflects the confidence of private enterprise in the overall policies and attitude of Government to the task of mineral development.

1558 E - Nov.1962 - 1,600